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Specialization and Happiness: A U.S.-Japan Comparison

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Abstract

This paper examines the relationship between specialization and happiness in marriage in the U.S. and Japan. Our findings, based on the General Social Surveys in the U.S. and Japan, indicate both similarities and differences in the determinants of marital happiness in the two countries. In the U.S., the findings are mixed. Women's reported marital happiness in the U.S. is more likely to follow the predictions of the bargaining model where their happiness is determined by their own income. Men's marital happiness in the U.S. follows the predictions of the specialization model; they are happier if their wives are not working or, alternatively, if they are financially dependent on their wives. In Japan, we find support for the specialization model, particularly in the case of women; they are happier if they are specialized in the household and they have a higher household income. Our research highlights how marital quality is affected by the institutional context and the normative environment.

Keywords: gender, family, marital happiness, specialization, bargaining
JEL-Codes: D13; J12; J16

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1. Introduction

The pursuit of happiness is one of the fundamental assumptions underlying the analysis of human behavior. And yet, it is only in recent years that scholars have become seriously engaged in "happiness science." The study of discovering what makes people happy is far from complete. Western societies are now richer, and their standard of living is substantially better, but the people are no happier today than they were fifty years ago (Layard 2005). The disconnect between economic well-being and subjective well-being has led to a renewed interest in investigating what makes some people happier than others.[1]

The aim of this paper is to identify the determinants of marital happiness, as a component of general happiness, in the U.S. and Japan. The economics of family literature predicts that specialization between the sexes increases the economic gains to marriage vis-à-vis efficient household production. However, specialization also increases interdependency between the spouses by offsetting the costs and benefits of marriage (Oppenheimer 1997). While the literature is rich in empirical evidence documenting the economic gains to specialization, we know little about how specialization affects happiness in marriage.

Continued concern regarding the stability of the institution of marriage and the increasing attention paid to the benefits of a healthy, satisfying marriage (Waite and Gallagher 2000), have made it increasingly important to understand the factors that determine happiness in marriage.[2] While scholars have been studying this question extensively for decades (see Glenn 1990; Hicks and Platt 1970; Spanier and Lewis 1980), prominent theories of marital quality are based on the case of U.S. marriages, and little attention has been paid to cross-national variation in the determinants of marital quality.

We hypothesize that happiness and well-being are associated with the social institutional context. What makes people happy in one society may not be the same in another if we consider the possibility that individual behavior is guided by market and non-market constraints specific to the institutional context. With an attention to differences in the

normative environment shaping marital quality in these two countries, we examine how the importance of economic resources, dependency, and children vary. Based on our empirical findings, we evaluate the explanatory power of existing models of marital quality, identifying models that have more salience in an international context.

2. Background

Investigations of marital quality draw on factors such as the presence of children (Twenge, Campbell, and Foster 2003), the duration of marriage (Vaillant and Vaillant 1993; VanLaningham, Johnson, and Amato 2001), and the economic characteristics of the family (e.g. Rogers 2004; Rogers and DeBoer 2001) in predicting marital happiness and divorce proneness. Included in the category of economic characteristics are: men's employment, income, and job characteristics (Amato and Rogers 1997; Fox and Chancey 1998); women's employment, income, and job characteristics (Locksley 1980; Rogers 2004; Rogers and DeBoer 2001; Sayer and Bianchi 2000; Schoen et al 2002); and family income (Amato et al 2003; White and Rogers 2000).

The economics of family literature predicts that specialization increases the gains to marriage vis-à-vis efficient household production (Becker 1991). Compared to a system in which individuals invest in both market and household human capital, a gendered division of labor is more efficient in that individuals only invest in skills in which they have a comparative advantage. The gendered division of labor leads to *inter*dependency in marriage—each spouse dependent on the other for the labor in which he or she has not specialized. The household benefits from the increased efficiency resulting from specialization.

The specialization model has clear implications regarding the incentives to marry (or not to marry) as well as the costs and benefits of marriage but is more ambiguous regarding

marital happiness. Becker (1991) argues that without specialization the gains to marriage will decline but does not make an explicit connection between specialization and marital happiness. Parsons (1942; Parsons and Bales 1955) comes closer in the sociological version of the specialization argument in claiming that, without specialization, status competition will arise between husband and wife. While Parsons' main interest was in the function of the family in the larger society and economy, implications of status competition for marital quality can be drawn. Competition, as opposed to cooperation, between spouses is likely to lead to a decline in marital quality. Synthesizing these specialization models, we can conclude that specialization results in both increased marital harmony and efficiency gains in the family.

Related to the specialization model is the independence hypothesis advanced in the family demography literature. The hypothesis predicts that an increase in women's market work increases the risk of marital disruption (see, e.g., Cherlin 1992; Preston and Richards 1975). To the extent that marital disruption is presumably rooted in poor marital quality, the implications of this hypothesis may be extended to the analysis of marital happiness (Brennan et al 2001), i.e., an increase in women's socioeconomic position would either result in lower levels of marital happiness or would allow women in already unhappy marriages to exit the relationship. In either scenario, if we accept that women's employment is associated with marital disruption, the implication of the independence hypothesis is that an increase in women's socioeconomic position will likely be associated with lower levels of marital happiness. It should be noted that the independence hypothesis is actually the "wife's" independence hypothesis (Ono 1998); it speaks specifically to the effect of the wife's economic resources, but is less clear on the effect of the husband's resources on marital quality. In the case of Japan, falling marriage rates have been partially attributed to women's increasing "independence" from men (Raymo and Iwasawa 2005).

The "revised independence hypothesis" (Brennan et al 2001) maintains that an improvement in family income from any source will have a positive effect on marital quality because it improves the family's overall quality of life and stability (Cherlin 1979; Oppenheimer 1997). A wife's earnings, however, have not only this positive income effect on marital quality but also an independence effect which may decrease marital stability as predicted by Becker (1991).

The role homophily perspective (Simpson and England 1981) claims that marital quality will be highest when men and women occupy similar structural positions. Contrary to the predictions of the specialization model, spouses are able to communicate more effectively and serve as companions for one another when they share the breadwinning role in the family. Similarly, the equity perspective (Mueller, Parcel, and Pampel 1979) asserts that spouses are happiest when household tasks are divided equitably. Although the role homophily perspective focuses primarily on the benefits of a shared world view and companionship derived from occupying similar roles and the equity perspective focuses on the benefits of sharing household responsibilities fairly, both point to similar roles for husband and wife as leading to greater marital quality.

The final model speaking specifically to the relationship between the economic characteristics of spouses and marital quality is the bargaining perspective (England and Farkas 1986; Presser 1994; Sorensen and McLanahan 1987; South and Spitze 1994). According to this model, individuals derive bargaining power in a marriage from economic resources. Complete specialization (which assumes that one spouse is specialized in the household and therefore generates no income) creates an extreme form of dependency where one spouse has no bargaining power over the other. The more bargaining power held by an individual, the more work they can get their spouse to do and the happier they will be.

While these are the key models theorizing the relationship between the economic characteristics of husbands and wives and marital quality, other models speak to the remaining correlates of marital quality. Notably, the lifecycle perspective theorizes how happiness in marriage is affected by the dynamics of changing family roles. For example, the presence of children affects marriage by constraining parents' time and money resources.[3] The overall predicted effect of children on marital happiness is therefore negative, with younger children having a stronger negative effect, since they create more demands on parents' resources than do older children.

2.1 Empirical Tests of the Models of Marital Quality

Empirically, there is little evidence in the literature supporting a specialization model of marital quality. Findings vary, however, depending on the measures of the economic characteristics of the spouses considered. Several scholars have found no negative effect of wives' employment on marital quality or stability (Locksley 1980; Schoen et al 2002; Spitze 1988; White and Rogers 2000). Similarly, Fendrich (1984) found no direct relationship between a woman's employment status and her husband's well-being.

When looking more specifically at the proportion of the family's income contributed by the wife or the wife's income in dollars, several scholars have found that more equal earnings by the husband and wife are related to a more equal sharing of tasks and greater marital quality (e.g. Hochschild 1989). Similarly, Sayer and Bianchi conclude: "rather than destabilizing marriage, wives' relative income may be a positive factor, part of the changing equation of interdependence between husbands and wives" (2000, 939). These findings are contrary to the predictions of a specialization model and are consistent with a role homophily or equity perspective. Rogers (2004), however, found that, when looking at the proportion of the family income contributed by the wife, the risk of divorce was greatest when wives'

contributions to the family budget are similar to their husband's; Brines and Joyner (1999) also found that the risk of marital disruption increases as the proportion of income contributed by the wife increases. Wilcox and Nock (2006) found that women's marital quality in particular suffers when they are earning a majority of the family income; they did not, however, examine the interaction of household income and the proportion of income earned by the wife to test whether it is in lower-income households with breadwinner-wives that reported marital happiness is low. Similarly, when looking at wives' income in dollars, Rogers (2004) found some support for a specialization model with the risk of divorce increasing at greater levels of wives' income. This finding does not speak directly to the relationship between wives' income and marital *quality,* however. Looking specifically at wives' dollar income and marital happiness, Rogers and DeBoer (2001) found that increases in women's income are associated with marital happiness for women and have no impact on men's marital happiness. This finding does not support a specialization model and instead suggests that women are happier in marriage when they are earning more money, consistent with a bargaining perspective. These studies highlight the lack of consensus in the literature regarding the relationship between wives' income and marital happiness.

As for the remaining predictors of marital happiness, few studies have addressed the relationship between family income and marital quality and the evidence is mixed. While some studies find a positive association between family income and marital happiness (Amato et al 2003), others find no association (Amato and Rogers 2001). White and Rogers call for greater attention to family income in the marital quality literature, claiming that: "given evidence that income and employment are related to divorce and that perceived economic hardship predicts marital quality, it is difficult to accept weak and null effects of income on marital quality at face value" (2000, 1044). Children, on the other hand, have a

consistently negative impact on marital happiness (Twenge et al 2003; VanLaningham et al 2001), particularly for women.

Informed by the theories and empirical findings of this literature, we set out to examine marital quality in the U.S. and Japan. We ask: how is marital happiness differently determined in the U.S. and Japan? Which theories of marital quality receive the most support in these different institutional contexts? In particular, how do the different norms, employment structures, and family structures in these two countries influence the relationship between the economic characteristics of spouses and marital quality?

2.2 A Comparative Perspective: the U.S. and Japan

Earlier research on the correlates of marital happiness (as previously discussed) has focused on the U.S. However, the extent to which these findings can be generalized or extrapolated outside of the U.S. is uncertain. Some comparative work has addressed research questions related to marital happiness. Westley (1998) compared levels of marital satisfaction in the U.S. and Japan, finding that respondents in the U.S. report higher levels of marital satisfaction than respondents in Japan. Stack and Eshleman (1998) analyzed the relationship between marital status and happiness in 17 countries (including the U.S. and Japan), finding that the effect of marital status on happiness did not vary significantly between the U.S. and Japan. Ono and Raymo (2006) examined the consequences of changes in marital satisfaction for women's market and household work hours in Japan, testing the predictions of the human capital accumulation hypothesis. Yamaguchi (2006) studied the relationship between work-family-balance and marital satisfaction among women in Japan. None of these studies speak to the correlates of marital happiness in a comparative framework, however, and this is the aim of our analysis.[4]

The determinants of marital quality may be specific to the society, and its set of social norms and institutional setup. In particular, Japanese and American couples are likely to measure the success of their marriages according to different criteria. While the relationship between a Japanese husband and wife has been described as "like air" in that it is vital for survival but its presence is not felt, Americans look to their spouses to fulfill emotional and companionship needs (Iwao, 1993). Furthermore, dependency is a taken-for-granted aspect of married life in Japan, whereas, in the U.S., dependency is often considered synonymous with powerlessness, giving it a negative connotation. For these reasons, Western theories of marital happiness are unlikely to apply in the same way in Japan.

Japan and the U.S. present ideal comparative cases for studying marital quality. While both are characterized as post-industrial economies, gender inequality is greater in Japan than in the U.S. by almost any measure (e.g. employment, wages, educational attainment, etc.), and Japan has lower divorce rates. Mean age at first marriage is also considerably higher in Japan (Raymo and Iwasawa, 2005) and marriage rates are lower.[5] These salient differences in gender and marriage in these two countries are linked to vast differences in the norms surrounding female labor force participation and the household division of labor, and the structure of employment and the family.[6]

In Japan, identities as a wife and mother are central to cultural conceptions of adult femininity. Ueno (2001, 215) cautions, however, that "'Japanese femininity' is a modern construct, and not at all traditional." In the aftermath of World War II, the Japanese government emphasized women's role as mothers despite the new constitutional guarantee of gender equality and women's increased work experience outside the home in the war industries. Women returned to the home as housewives in the postwar period when Japan was experiencing rapid economic growth. According to Ochiai (1997, 35), "in the postwar period, the state of being a housewife became so strongly normative that it was practically

synonymous with womanhood." From 1950 on, women's labor force participation rate has fluctuated between 46 and 50 percent.[7]

Japanese wives occupy special positions of power in the household because of their husbands' disinterest in household management and, more specifically, their control of the family budget (Hayashi 1990; Iwao 1993; Lebra 1984; White 2002). In most households, the husband hands over his paycheck to his wife and, in turn, receives a set spending allowance (Lebra 1984). Kimura (2001) reports that in 61 percent of households, the husband transfers his entire salary to the wife. According to the Prime Minister's 1995 annual survey, over 80% of Japanese respondents considered household finances and shopping to be women's work (White 2002). This control over the family finances distinguishes the household division of labor in Japan and the U.S. According to Iwao (1993, 86), "although the battle for economic independence for women in the United States has been overt and often bitter, Japanese women have exercised great authority in this realm for a long time." In the U.S., there is some evidence of variation in money management strategies by marital history (Heimdal and Houseknecht 2003), by social class (Zelizer 1989), by wife's employment status, and by race and ethnicity (Kenney 2006). However, unlike Japanese women, U.S. women have traditionally not garnered domestic power from the management of household financial resources.

In addition to social norms supporting a gendered division of labor, employment policies in Japan work to discourage women from full-time labor force participation. Spouses benefit from tax deductions as long as their annual income is less than 1.35 million yen (Ministry of Finance 1999). Since wives are typically secondary earners in the household, the tax system discourages married women from seeking full-time employment.[8] Female workers are expected to quit their jobs after marriage or childbirth because most firms operate under a seniority system which rewards workers according to their tenure. This

expectation results in a vicious cycle where women are excluded from the internal labor market. Since female workers are associated with a higher risk of exit (to take on family responsibilities), employers hire women into non-career track (or secondary) positions consisting of menial, dead end jobs.

These normative expectations and the economic incentives in favor of household specialization are reflected in survey statistics which consistently show that Japanese women are more likely to support the gendered division of labor than are women in Western societies. For example, survey results from the Tokyo Metropolitan Government (1994) highlight these gender differences between the U.S. and Japan. Women in Japan were significantly more likely to agree to the statement: "The husband should be the breadwinner, and the wife should stay at home" (56 percent in Japan versus 24 percent in the U.S.). They were also more likely to agree that marriage is the ultimate form of happiness for women (79 percent in Japan versus 29 percent in the U.S.). At the same time, Japanese women's beliefs about the gendered division of labor are considerably more egalitarian than Japanese men's. Some have pointed to this gap as contributing to the increasing numbers of women postponing, and even foregoing, marriage (Sugihara and Katsurada, 2002).

Time use studies further document the extent of sex specialization in Japan. In 2000, Japanese wives spent 29 hours per week on housework while husbands spent just three hours. Thirty percent of Japanese husbands did no housework at all (Rindfuss et al 2004). In many cases, Japanese women's normative responsibilities for caring for the home, family, and elderly relatives make labor force participation challenging. According to Greenhalgh, in East Asia the "roots of women's secondary status can be traced to the interaction of capitalist economic institutions and patriarchal family institutions" (1985, 265). Perhaps for all of these reasons, Japanese women's status is derived more from their husband's status than their own work status (Ogasawara 1998).

In the U.S., women's withdrawal from the labor market in the postwar period represented an historical anomaly (Coontz 1992) sparked by increasing faith in U.S. institutions (Cherlin 1992) and a high standard of living vis-à-vis the previous generation (Easterlin 1987). For women in working class racial and ethnic minority families, this specialization in the household in the 1950s did not occur. According to the U.S. Census Bureau, women's labor force participation rate increased from 30% in 1950 to 61% in 2000. Although a smaller proportion of U.S. women than Japanese women were in the labor force in 1950, it is clear that over the second half of the 20th century, women in the U.S. increased their labor force participation much more dramatically. Today, women in the U.S. are considerably more likely to be in the labor force than their Japanese counterparts.

While the household division of labor is clearly gendered in the U.S., the sex segregation of household tasks is not as extreme as in Japan. In their analysis of NSFH data, Bianchi et al (2000) estimated that in 1995, women in the U.S. were doing 1.8 times more housework than men, compared to six times more in 1965. In other words, the gender gap in the performance of household tasks has been closing over the past half century. With the prevalence of divorce in the U.S., women are more hesitant than their Japanese counterparts to embrace dependence on their husbands both financially and in terms of status.

Based on these differences in work and family in the U.S. and Japan, we expect to find significant differences in the determinants of marital quality. We predict that while working could have a positive or negative effect on marital happiness for women in the U.S. depending on the theory (specialization versus role homophily or bargaining), it is likely to have a negative effect for women in Japan because of the normative and structural constraints on women's employment. Similarly, while the predicted effect of spouse's income on U.S. women's marital happiness varies by theory, Japanese women's marital happiness should increase with greater levels of spousal income since Japanese women's status is largely a

reflection of their husband's status. We also expect that Japanese women should express greater marital happiness when they are economically dependent on their husbands. Women in the U.S., however, are not expected to have the same positive relationship between dependency and marital quality. As for the men, we expect men in both countries to express greater marital happiness with higher levels of earned income and, in Japan in particular, lower levels of marital happiness with higher levels of *spousal* income.

3. Data

We use data from the General Social Survey administered in the U.S. and Japan. The Japanese General Social Survey (hereafter JGSS) is the Japanese version of the U.S. General Social Survey (hereafter GSS)[9]. The JGSS therefore includes a wide range of survey questions that are directly comparable to the GSS. For our analysis, we use the survey years 2000, 2002 and 2004 for the GSS, and 2000, 2001, 2002 and 2003 for the JGSS.[10] For both countries, we restrict the sample to married person between the ages of 20 and 69. We exclude respondents who are retired and who are currently students since one of our primary research interests is in the employment status and economic resources of husbands and wives. Retired couples are likely to negotiate power and dependence differently in their marriages than those with earned income. Students, while not currently earning income, are investing in their future earnings potential and are therefore distinct from others without earnings. For these reasons, both groups are excluded to make the respondents in the sample population more comparable. The starting sample size is 1,811 in the GSS and 6,740 in the JGSS.

The outcome variable of interest is marital happiness. This variable records the response to the question: Taking things all together, how would you describe your marriage? In the GSS, marital happiness is recorded in three categories ranging from 1 = not too happy to 3 = very happy. In the JGSS, it is coded in five categories. Marital happiness is modeled

separately for Japan and the U.S.; this modeling strategy is preferred both for theoretical reasons (the correlates of marital happiness are likely to be different in the two countries) and methodological ones (in order to avoid the problems inherent in pooling responses to marital happiness indicators measured on different scales). It is possible that the meaning of the measure of marital happiness could vary between the two countries but this is a challenge faced in any comparative research. Given that the JGSS measures were created as comparative measures for the GSS ones, we feel confident that our measures of marital happiness reasonably capture the same construct in both contexts.

We use ordered logits in all regressions.[11] The standard errors are White-corrected for individual-specific heteroscedasticity. Because we are primarily interested in examining the asymmetries between men and women, we estimate models separately for men and women throughout our analysis. In all models estimated here, we control for age, age squared and survey year.[12] In the U.S., we also control for race (but these results are suppressed from the tables). Because the range of the survey years used in our sample is relatively small, the survey year dummies are included only to control for fixed effects, and we do not make any substantial claims regarding changes over time.

Our explanatory variables include the following: education coded as years of schooling completed, employment status of respondent and employment status of spouse (0 = not working, 1 = working), dummy variable coded 1 if the respondent has any children, a self-reported measure of health, and income. Although the causal relationship between health and marital quality is uncertain, we include health as a predictor in our analyses.[13] The coding procedures are documented in the Appendix.

A common caveat in the literature on marital happiness concerns selection effects (e.g. Glenn 1990; VanLaningham et al 2001). Since measures of marital quality are only observed for currently married persons in these data, the sample excludes respondents who

were previously married but may have separated because they were unhappy in marriage. In our analyses, we control for selection effects following the procedure outlined by Heckman (1979). In the first stage selection equation, we used the covariates in the happiness equation plus an identifying (or exclusion) variable which strongly affects the probability of marriage but not necessarily happiness in marriage. In order to maintain consistency between our analyses in the U.S. and in Japan, we searched for a variable that was available in both countries and in all survey years. Our identifying variable is the type of dwelling that the respondent currently resides in. This variable is coded 1 if the respondent lived in a detached family house, and 0 if s/he lived in other types of residences. The intuition is that respondents who were previously married but currently separated are less likely to be living in a detached family dwelling (as opposed to, for example, an apartment). The results of the probit selection equation are shown in Table A.1 of the Appendix. In both countries, type of dwelling significantly affects selection into marriage, but has no effect on happiness in marriage. We then manually constructed the inverse Mills ratio (λ), and estimated all models with its inclusion. The λ term remains insignificant in most models.[14]

The data available to test comparative models of marital happiness in the U.S. and Japan impose certain limitations on our analysis. For example, panel data would be suitable for the study of marital happiness.[15] Panel data would allow us to examine the causal direction of the relationship between marital happiness and income. Data from both spouses would also improve our understanding of how different factors shape the happiness of married individuals. Multiple measures of marital happiness and measures of children's age in both countries would strengthen our analyses. We hope that in the future, such data will be available from both countries, making such an analysis possible. Despite these limitations, we contend that this research provides an opportunity to consider how institutional policies and the gendered meaning of roles in the family influence the assessment of marital quality in

Japan and the U.S. Future research with additional countries or including measures of family dynamics and specific policies cross-culturally will be able to evaluate the explanations for the comparative differences in marital happiness raised in this research.

4. Analysis and Results

We begin by examining the relationship between specialization and happiness in marriage by estimating models separately for men and women, and by spouse's employment status. We then test the predictions of the bargaining, equity, and role homophily models by looking more closely at the relationship between marital happiness and income. All models include a full set of controls, including age, age squared, and survey years. In the U.S., we also control for race. These effects remain roughly consistent across models, and are suppressed from the tables. The column "M vs W" in Table 1 and hereafter indicates the significance of interaction effects between men and women. These differences were calculated by including a full set of interactions with female and all other covariates.

Table 1 shows the results for the U.S. sample consisting of (a) all married persons, (b) married and respondent working and (c) married and both spouses working. The table highlights some asymmetries in the correlates of marital happiness between men and women in the U.S. The results do indicate some similarities across the three samples examined here, however. In all models, we find that the main effect of gender is not significant indicating that on average, men and women are equally happy in marriage. This is consistent with recent studies of marital happiness which have failed to find evidence of "his" and "hers" marriages (e.g. Kurdek 2005; Waite and Gallagher 2000). Health has a consistently positive effect for both men and women across all three samples.

In the full sample of married persons (column [a]), spouse's employment and presence of children have negative effects on marital happiness. Whether the respondent is

working or not does not have any effect on marital happiness. Household income also has no effect, a finding which is consistent with the literature (e.g. Amato and Rogers 1997; White and Rogers 2000). Separate results for men and women indicate that men are less happy if their wives are working, a finding which is consistent with a specialization model. It is possible, however, that causality runs in the opposite direction and men who are in unhappy marriages have wives who choose to work outside the home. The results also clearly show that women are less happy if they have children. These results are similar for the sample of married and the respondent working (column [b]), and married and both spouses working (column [c]).

We find both similarities and differences in the Japanese sample (Table 2). In all models, health has positive effects on marital happiness. Children have negative effects on marital happiness, and this effect is stronger (or more negative) for working women. While these patterns parallel the findings in the U.S., we observe stark differences in other areas. First, women are systematically less happy in marriage than are men. This may be partly attributable to the greater burden of parenting among women as indicated by the negative effect of children. Second, women with working husbands are happier, but women who work themselves are less happy (Table 2, column [a]). This finding strongly supports the specialization model for women. And third, in all models, higher household income is associated with greater happiness for both men and women.

Table 2: Marital happiness in Japan (ordered logits)

In our final analysis, we examine how marital happiness is affected by different specifications of income to more directly test theories of bargaining, equity, and role homophily. Because our primary interest is to examine the effect of economic resources on

marital quality, the current sample consists of respondents who were working at the time of the survey. We include in our models measures of relative income, e.g. the ratio of income between spouses. However, Oppenheimer (1997) cautions that using relative income alone may lead to ambiguous results, since it may not fully capture the independence effects at the extremes.[16] We therefore include measures of both absolute and relative income.

The results in Table 3 show that income affects marital happiness for both husbands and wives in the U.S., but in different ways. Results for Panel (a) of Table 3 (which are identical to Table 1, column [b]) show that household income has no effect for both men and women. In Panel (b), we find that own income has no effect for men, but has a large positive effect for women.[17] In Panel (c), we add spouse's income specified in quintiles to examine nonlinearity effects. The omitted (or reference) category of the quintiles consists of nonworking spouses. The results further highlight the contrasting effects of income on husbands and wives. For men, own income has no effect, but spouse's income does. For women, own income has a large positive effect, but spouse's income does not.

Table 3: Marital happiness as a function of income (ordered logits)

For men, spouse's income has an overall negative effect on happiness. These results support our earlier finding that men are less happy in marriage if their wives are working. However, Panel (c) also shows a pattern where happiness is lower in the lower quintiles of spouse's income, but higher in the higher quintiles.[18] In the highest quintile, men's happiness is not statistically different from those who are married to non-working wives. The results thus indicate that men are less happy in marriage if their wives are working, but they are just as happy as the husbands of non-working wives if their working wives are earning a high income.

We next examine how one's own financial contribution to the household affects happiness in marriage (Table 3, Panels [d] and [e]). For this analysis, we construct a measure of relative income, or dependency, which is the ratio of the respondent's own income to household income (Y/Y_{HH}), where $0 < Y/Y_{HH} \leq 1$.[19] In the case of men, for example, higher values indicate greater dependency of wives on the husbands' income. In completely specialized households where the wives are not working, $Y/Y_{HH} = 1$ (since spouse's income is zero), which is the condition of full dependency. Following the empirical strategy described by Oppenheimer (1997) and others, we include both logged household income and dependency in our models in order to assess how dependency affects happiness in marriage at a given level of absolute household income. Our results for men in the U.S. show that household income has no effect, but their greater contribution to the household income lowers their happiness. Put another way, greater contribution to the household income by their wives increases their happiness, a point we elaborate below. For women, neither (absolute) household income nor share of household income has any effect on marital happiness.

We have thus far shown that men in the U.S. are less happy in marriage if their wives are working. But they are also happy as long as their wives make a substantial contribution to the household finances. How much is a substantial contribution? Using the estimated coefficients from our regressions, we can estimate the share of household income that makes men just as happy if their wives were not working. The happiness equation underlying Panel (d) can be expressed as follows:

$$U = \beta_1 S + \beta_2 Y_{HH} + \beta_3 Y/Y_{HH} \qquad (1)$$

where $S = 0$ if the wives are not working, and $S = 1$ if the wives are working. (Although not shown in Panel [d], β_1 was estimated to be -.702 [p value < .01]). Other covariates are suppressed from the equation. Equation (1) can be rewritten:

$$U = \beta_2 Y_{HH} + \beta_3 \qquad \text{if } S = 0 \text{ (since } Y/Y_{HH} = 1) \qquad (1')$$

$$U = \beta_1 + \beta_2 Y_{HH} + \beta_3 Y/Y_{HH} \qquad \text{if } S = 1 \qquad (1'')$$

The difference in happiness between men with working wives and men with non-working wives is therefore:

$$\Delta U = \beta_1 + \beta_3(Y/Y_{HH} - 1) \qquad (2)$$

By setting $\Delta U = 0$, we can estimate the men's share of household finance that would make them just as happy if their wives were not working, given by:

$$\Delta U = 0 \text{ when } Y/Y_{HH} = 1 - \beta_1/\beta_3 \qquad (2')$$

Using the estimated coefficients from Panel (d), it can be shown that $\Delta U = 0$ when $Y/Y_{HH} = .287$, i.e. when wife's contribution to household finances exceeds (roughly) 70 percent. This relationship is illustrated in Figure 1. The horizontal axis shows the line $\Delta U = 0$, which corresponds to the level of men's happiness if their wives are not working. The upward sloping line shows how wives' contribution to household finances affects men's happiness in marriage. The triangular region from 0 to 70 percent is below the line $\Delta U = 0$, and is shown to be negative. In other words, men whose working wives contribute less than 70 percent to the household finances is less happy compared to men who are married to non-

working wives. In contrast, the region from 70 to 100 percent lies above the line $\Delta U = 0$, and is shown to be positive. In order to compensate for the disutility of being married to working wives, men would require at least a 70 percent contribution to the household finances from their wives.

In Panel (e), we include a self-assessed measure of household income in comparison to other households. Earlier literature on happiness has emphasized the importance of comparison income, where people evaluate their happiness and well-being in comparison to others (Clark and Oswald 1996). The variable we use is a five category variable which was recorded in response to the GSS question: Compared with American families in general, would you say your family income is far below average, below average, average, above average, or far above average? Results indicate that comparison income has no effect on marital happiness for men and women in the U.S.

Figure 1: The relationship between wife's contribution to household finances and men's happiness in the U.S.

The effect of income on marital happiness in Japan deviates from the patterns observed in the U.S. Household income has a significant effect on marital happiness for both men and women in Japan (Panel [a]). Higher personal income is significantly associated with higher happiness for men (Panel [b]), but has no effect on women. Spouse's income has no effect on happiness for men, but has a positive effect for women (Panel [c]). Women's happiness in marriage is therefore related not to their own income, but to their husbands' income. The quintile categories show that women's happiness increases as a function of husband's income.

In Panel (d), our results show that absolute (household) income is a more important correlate of happiness in marriage than how much each spouse contributes to the household.

Dependency does not seem to matter for either men or women in Japan. Japanese women are happier when their spouses are earning a higher income (Panel [c]), but their happiness is not influenced by the proportion of the household income earned by their spouse (Panel [d]). For Japanese men, marital happiness is not related to dependency but rather to their own income and to the overall household income. Surprisingly, it seems that there are striking similarities in the correlates of marital happiness for Japanese men and U.S. women.

In Panel (e), we include the exact same question from the GSS about comparison income which was also asked in the JGSS. In the 2003 JGSS, about half of the respondents were not asked this question, so the variable is missing. We construct a missing variable dummy to recover the loss in sample size. In stark contrast to the U.S., comparison income significantly affects marital happiness for both men and women (as evaluated by the differences in the log-likelihood between Panels [a] and [e]). These results suggest that in comparison to the U.S., happiness in Japanese households is determined more by their financial status relative to others.

5. Discussion

In this examination of the determinants of marital quality, we find that most of the predictors of marital quality discussed in the literature matter in both the U.S and Japan but in different, and sometimes surprising, ways. Our research underscores the importance of how marital quality is affected by the institutional context and the normative environment.

As expected, children are related to lower levels of marital happiness for women in both the U.S. and Japan. This is consistent with the role strain or restriction of freedom explanation of declining marital quality in parenthood (Twenge et al 2003) because the negative effect is largely limited to women. It seems possible that women in both countries may bear the primary burden of children, with their husbands showing little change in their

marital happiness with the presence of children. In addition, health is significantly, positively associated with marital quality for both women and men in the U.S. and Japan.

U.S. women's marital quality is less tied to their husband's income than is Japanese women's marital quality. Women in the U.S. report higher levels of marital happiness when they are earning more themselves. Dependency on one's husband has no effect on marital happiness. Men in the U.S. with wives who do not work outside the home and those with high-earning wives reported higher levels of happiness than men with lower-earning wives. Of course, given the cross-sectional nature of the data, it is also possible that in happier marriages, women feel freer to either be economically dependent on their husbands or to reject pressures to "do gender" by earning less than their husbands (e.g. see Ono and Raymo 2006). The findings for women show some support for the bargaining model since women with more resources have greater power to leave the marriage and therefore have greater bargaining power. Men seem to embrace a specialization model in which they are either the sole breadwinner or the financially dependent spouse.

The indicators of economic characteristics included in our models for Japan are related to marital quality in expected ways for the most part. Overall, Japanese women's marital happiness closely approximates the predictions of a specialization model. As we hypothesized, the findings suggest that women are happier in marriage if their husbands are working, but they are not working themselves. Happiness is not related to their own income, but to their husband's income and their overall household income. These findings are consistent with the argument that Japanese women's status is "reflected"; it is based primarily on their husband's status rather than on their own work status (Ogasawara 1998). Men's reported marital happiness is correlated with own income, as we predicted. However, their marital happiness is not related to the employment status of wives, nor financial dependence on wives. Our findings follow the prediction that, based on the normative environment

supporting a gendered division of labor in Japan, men's marital happiness is more strongly related to their own income while women's is tied to their husband's.

These findings are surprising because the correlates of marital happiness are similar for Japanese men and for U.S. women. Own income is related to marital happiness for Japanese men and for U.S. women. Economic dependency on one's spouse and spouse's income is not related to the marital happiness of either of these groups. The potential explanations for these findings differ for the two groups, however. A specialization model for Japanese men and a bargaining model for U.S. women provide the best fit to the data. A role homophily model does not seem to be supported for U.S. women since neither husband's work status nor his income is significantly associated with working women's marital happiness.

U.S. men and Japanese women also share some similarities. For both groups, own income is not a significant correlate of marital happiness. Both groups report greater marital happiness when they have higher-earning, rather than lower-earning, spouses. However, U.S. men express greater marital happiness, overall, when they are married to women who do not work outside the home. Among U.S. men with working wives, financial dependency is associated with greater marital happiness while financial dependency is not significantly related to marital happiness for Japanese women. We interpret Japanese women's responses as consistent with a specialization model in which women specialize in the domestic sphere and men in the market. U.S. men, on the other hand, are polarized, with some men expressing marital happiness as the sole breadwinner and others reporting happiness while economically dependent on their wives. This finding is consistent with previous research in the U.S. that found the lowest levels of marital stability in marriages in which both partners make equal economic contributions (e.g. Rogers 2004). Research by Buss and colleagues (2001) further supports our results. They found that over the past half century, men have

increased the importance they place on finding a mate with good financial prospects while, at the same time, decreasing the importance they place on finding a mate who is a good cook. Perhaps the economic foundation for a stable marriage is changing in the U.S. along with increasing female labor force participation rates over the last 50 years and the declining hegemony of the traditional division of labor.

These differences in the correlates of marital happiness for Japanese and U.S. women are likely attributable to the different norms, employment structures, and family structures in these two countries. U.S. women are influenced by a social-institutional context in which divorce is common (making dependency on one's spouse costly) and in which full-time employment is normative for women. Japanese women, however, are less likely to face divorce than their peers in the U.S. and live in a climate less supportive of women's full-time employment (both in terms of economic and social sanctions) and of an egalitarian division of household labor.

It is possible that the differences observed between Japanese women and women in the U.S. could also be partially determined by the different systems for managing household money in the two countries. In Japan, where the wife controls the husband's earnings, greater earnings by the husband translate into greater economic power for the wife. Her own earnings, however, are often considered only for the purchase of extras and luxuries and therefore not as salient in shaping the family's standard of living (Iwao, 1993). In the U.S., on the other hand, where women typically do not exercise the same control over their husbands' paychecks, husband's income is less salient to a woman's marital happiness vis-à-vis her own earnings. These comparative insights bring us closer to an understanding of the cross-cultural correlates of marital happiness. Future research in other contexts marked by a gendered division of household labor, low risk of investment in marital-specific capital (i.e. low divorce rates) and alternative sources of marital power beyond breadwinning (i.e.

women's control of the household budget) vis-à-vis the U.S. would further confirm that these elements of the social-institutional context matter in shaping marital happiness.

On the whole, while Japanese men and women seem to embrace marriages based on specialization, in the U.S., there are noticeable disparities in men and women's perceptions of a good marriage. We interpret our analyses as showing that U.S. women want to earn high incomes and contribute to the family financially while men are polarized with some men also wanting their wives to take financial responsibility for the family and others preferring to maintain the sole breadwinner role. Perhaps this polarization among U.S. men is evidence of cultural lag, with some men holding onto a model of marriage that may not be efficient or practical in today's society. Future research will clarify whether U.S. men are simply lagging behind women in changing their evaluations of a "good" marriage or if men's conceptualization of a good marriage is linked to other underlying factors, such as beliefs about the gendered division of labor.

Appendix

Imputations

In the GSS, health is a four-category self-reported measure of health ranging from 1 = poor to 4 = excellent. Due to survey design, this measure is missing for approximately one-third of the sample because these respondents were not asked the question. To salvage the loss in sample size, we code these respondents as health missing. Further, the frequency distribution of the health variable showed that the response rate for "health = poor" was less than 5 percent of the entire sample. Since "health = poor" is the lowest ordered category of health, designating this category as the baseline category resulted in cases where the model did not converge under certain specifications. We therefore combined "health = poor" with "health = fair." The resulting health variable in the GSS is therefore coded: 1 = poor and fair (omitted category), 2 = good, 3 = excellent, 4 = missing. The JGSS also includes the health variable in response to the exact same question, but the response is recorded in five categories ranging from 1 = poor to 5 = excellent. We did not construct a missing category because the question was asked to all respondents.

The GSS includes direct measures of respondent's income and household income, but not spouse's income. We assume that spouse's income is the difference between household income and respondent's income as a close approximation. In the JGSS, all three measures of income are available, but the proportion of missing cases was not negligible (15 percent for respondent's income, 25 percent for spouse's income, and 28 percent for household income). Deletion of these missing cases from the survey sample may introduce systematic bias into the analysis since the missing income may not be missing at random (Little and Rubin 1987). We therefore employed the following procedure to predict income, and imputed these measures in place of missing income in the JGSS.

(1) Respondent's income (Y).
For each survey year, we estimate the following Mincer earnings equation separately for men (m) and women (w).

Men: $$\ln Y = \alpha_m + \sum_{m=1}^{M} \beta_m X_m + \varepsilon \quad \text{(A.1)}$$

Women: $$\ln Y = \alpha_w + \sum_{w=1}^{W} \beta_w X_w + \varepsilon \quad \text{(A.2)}$$

where X is the set of control variables that include the following: Age, age squared, education, tenure, tenure squared, working time, working time squared, part-time employment dummy, firm size of establishment, and industry sector. Equations A.1 and A.2 are estimated using OLS. We then retain the coefficients α and β, and use these to predict $\ln \hat{Y}$ if the respondent is working but Y is missing.

(2) Spouse's income (Y_s)
If Y_s is missing, then we predict $\ln \hat{Y}_s$ by estimating the Mincer equation using the coefficients α and β derived from equations A.1 and A.2. If the husband is working but his income is missing, then we predict $\ln \hat{Y}_s$ by using α_m and β_m, and if the wife is working but her income is missing, then we predict $\ln \hat{Y}_s$ by using α_w and β_w,

(3) Household income (Y_{HH})
If Y_{HH} is missing, but both spouses are working, then we predict Y_{HH} as the sum of the incomes of both spouses. If income of either spouse is missing, then we substitute the missing income with the predicted income. For example, if both spouses are working but respondent's income is missing, then we predict $Y_{HH} = \exp(\ln \hat{Y}) + Y_s$.

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Table 1: Marital happiness in the U.S. (ordered logits)

	(a) Married persons				(b) Married and working				(c) Married and both spouses working			
	Full	Men	Women	M vs W	Full	Men	Women	M vs W	Full	Men	Women	M vs W
Female	-0.163				-0.151				-0.063			
	(0.110)				(0.123)				(0.131)			
Education	0.038	0.055	0.022		0.041	0.054	0.026		0.036	0.048	0.015	
	(0.021)	(0.029)	(0.034)		(0.025)	(0.031)	(0.044)		(0.027)	(0.035)	(0.045)	
Working	-0.088	0.254	-0.131									
	(0.143)	(0.296)	(0.166)									
Spouse working	-0.342 *	-0.506 **	0.014		-0.383 *	-0.499 **	0.065					
	(0.142)	(0.178)	(0.241)		(0.164)	(0.190)	(0.309)					
Children	-0.402 **	-0.174	-0.629 **		-0.536 **	-0.196	-0.953 **	*	-0.592 **	-0.325	-0.843 **	
	(0.145)	(0.210)	(0.207)		(0.171)	(0.223)	(0.274)		(0.187)	(0.257)	(0.281)	
Health [a]												
Good	0.457 **	0.705 **	0.206		0.777 **	0.600 *	0.966 **		0.752 **	0.555	0.858 *	
	(0.176)	(0.255)	(0.250)		(0.217)	(0.279)	(0.350)		(0.242)	(0.332)	(0.355)	
Excellent	1.108 **	1.180 **	1.079 **		1.412 **	1.127 **	1.869 **		1.482 **	1.174 **	1.820 **	
	(0.193)	(0.276)	(0.275)		(0.233)	(0.298)	(0.378)		(0.259)	(0.352)	(0.385)	
Missing	0.375 *	0.155	0.565 *		0.554 *	0.094	1.161 **	*	0.589 *	0.024	1.071 **	*
	(0.184)	(0.270)	(0.258)		(0.225)	(0.298)	(0.350)		(0.251)	(0.357)	(0.357)	
Log HH income	0.116	0.096	0.182		0.204	0.218	0.323		0.130	0.150	0.263	
	(0.145)	(0.211)	(0.203)		(0.181)	(0.231)	(0.296)		(0.202)	(0.274)	(0.310)	
λ	0.046	0.370	-0.091		-0.004	0.575	-0.376		-0.098	0.499	-0.371	
	(0.325)	(0.492)	(0.440)		(0.408)	(0.534)	(0.646)		(0.462)	(0.631)	(0.689)	
N	1,811	865	946		1,336	763	573		1,098	569	529	
Log-likelihood	-1,348	-612	-717		-976	-538	-423		-816	-415	-391	

* p<.05 ** p<.01. Robust standard errors are in parentheses. All models include controls for age, age squared, race, and survey year dummies. Ordered logit cut-points are suppressed from the output.

[a] Reference (or omitted) category is the combined category of poor health and fair health.

Table 2: Marital happiness in Japan (ordered logits)

	(a) Married persons								(b) Married and working								(c) Married and both spouses working							
	Full		Men		Women		M vs W		Full		Men		Women		M vs W		Full		Men		Women		M vs W	
Female	-0.324	**							-0.362	**							-0.269	**						
	(0.057)								(0.064)								(0.070)							
Education	0.032	**	0.033	*	0.033				0.033	*	0.031		0.042				0.050	**	0.046	*	0.054	*		
	(0.011)		(0.016)		(0.017)				(0.013)		(0.016)		(0.023)				(0.016)		(0.022)		(0.025)			
Working	-0.160	*	0.094		-0.229	**																		
	(0.067)		(0.183)		(0.073)																			
Spouse working	-0.013		-0.084		0.227	*	*		-0.043		-0.093		0.280											
	(0.058)		(0.073)		(0.113)				(0.067)		(0.076)		(0.178)											
Children	-0.292	**	-0.328	*	-0.284	*			-0.361	**	-0.257		-0.468	**			-0.519	**	-0.417	*	-0.531	**		
	(0.092)		(0.139)		(0.125)				(0.110)		(0.153)		(0.170)				(0.135)		(0.204)		(0.188)			
Health [a]																								
Fair	0.171		0.052		0.261				0.081		0.318		-0.177				0.096		0.373		-0.067			
	(0.166)		(0.248)		(0.229)				(0.207)		(0.285)		(0.311)				(0.277)		(0.463)		(0.339)			
Average	0.293		-0.024		0.517	*			0.199		0.249		0.169				0.272		0.292		0.315			
	(0.157)		(0.236)		(0.218)				(0.196)		(0.273)		(0.293)				(0.264)		(0.448)		(0.322)			
Good	0.887	**	0.621	**	1.080	**			0.823	**	0.889	**	0.778	**			0.882	**	0.900	*	0.937	**		
	(0.159)		(0.239)		(0.220)				(0.198)		(0.276)		(0.296)				(0.266)		(0.450)		(0.324)			
Excellent	1.535	**	1.257	**	1.725	**			1.436	**	1.514	**	1.349	**			1.516	**	1.530	**	1.534	**		
	(0.162)		(0.242)		(0.223)				(0.201)		(0.278)		(0.298)				(0.268)		(0.454)		(0.326)			
Log HH income	0.309	**	0.295	**	0.317	**			0.391	**	0.376	**	0.443	**			0.390	**	0.447	**	0.405	**		
	(0.064)		(0.101)		(0.085)				(0.077)		(0.109)		(0.117)				(0.100)		(0.154)		(0.136)			
λ	-0.240		-0.824		0.114				0.194		0.183		0.647				-0.418		0.539		-0.404			
	(0.352)		(0.645)		(0.430)				(0.414)		(0.799)		(0.530)				(0.711)		(1.492)		(0.826)			
N	6,740		2,947		3,793				4,899		2,750		2,149				3,461		1,522		1,939			
Log-likelihood	-8,176		-3,397		-4,743				-5,892		-3,153		-2,709				-4,203		-1,768		-2,417			

* p<.05 ** p<.01. Robust standard errors are in parentheses. All models include controls for age, age squared, and survey year dummies. Ordered logit cut-points are suppressed from the output.

[a] Reference (or omitted) category is poor health.

Table 3: Marital happiness as a function of income (ordered logits)

		U.S.			Japan		
		Men	Women	M vs W	Men	Women	M vs W
(a)	Log HH income (ln *Y*)	0.218	0.323		0.376 **	0.443 **	
		(0.231)	(0.296)		(0.109)	(0.117)	
	λ	0.575	-0.376		0.183	0.647	
		(0.534)	(0.646)		(0.799)	(0.530)	
	Log-likelihood	-538	-423		-3,153	-2,709	
(b)	Log R income (ln *Y*)	-0.270	0.224 *	**	0.241 **	0.004	**
		(0.139)	(0.110)		(0.073)	(0.049)	
	λ	-0.285	-0.654		-0.781	-0.946 **	
		(0.396)	(0.398)		(0.634)	(0.349)	
	Log-likelihood	-537	-421		-3,154	-2,715	
(c)	Log R income (ln *Y*)	-0.192	0.248 *		0.252 **	0.010	**
		(0.152)	(0.121)		(0.073)	(0.049)	
	Spouse income						
	Quintile 1	-0.608 **	0.278		-0.151	0.111	
		(0.226)	(0.767)		(0.131)	(0.203)	
	Quintile 2	-0.820 **	0.809		-0.182	0.412 *	**
		(0.289)	(0.790)		(0.117)	(0.190)	
	Quintile 3	-0.518 *	0.529		-0.072	0.490 *	*
		(0.257)	(0.822)		(0.126)	(0.216)	
	Quintile 4	-0.574 *	0.606		0.067	0.471 *	
		(0.291)	(0.840)		(0.141)	(0.211)	
	Quintile 5	0.223	0.732		0.145	0.814 **	**
		(0.342)	(0.893)		(0.115)	(0.208)	
	λ	0.122	-0.314		-0.490	-0.467	
		(0.461)	(0.604)		(0.645)	(0.366)	
	Log-likelihood	-532	-419		-3,150	-2,706	
(d)	Log HH income	0.205	0.350		0.408 **	0.443 **	
		(0.232)	(0.295)		(0.110)	(0.118)	
	Share of HH income	-0.984 **	0.592	**	0.316	-0.152	
	$= Y / Y_{HH}$	(0.377)	(0.444)		(0.179)	(0.208)	
	λ	0.634	-0.418		0.183	0.727	
		(0.533)	(0.641)		(0.802)	(0.543)	
	Log-likelihood	-534	-422		-3,151	-2,709	
(e)	Log HH income (Y_{HH})	0.182	0.229		0.200	0.284 *	
		(0.239)	(0.312)		(0.117)	(0.123)	
	Relative standing						
	Below average	-0.051	-0.136		0.063	0.155	
		(0.570)	(0.592)		(0.167)	(0.188)	
	Average	-0.070	-0.128		0.279	0.482 **	
		(0.533)	(0.560)		(0.166)	(0.186)	
	Above average	0.130	0.156		0.451 *	0.841 **	
		(0.530)	(0.620)		(0.195)	(0.222)	
	Far above average	-0.100	0.146		1.397 **	0.618	
		(0.622)	(0.774)		(0.423)	(0.444)	
	Missing				0.650 **	0.543 *	
					(0.216)	(0.231)	
	λ	0.564	-0.461		-0.180	0.401	
		(0.549)	(0.656)		(0.812)	(0.537)	
	Log-likelihood	-538	-422		-3,139	-2,696	

* p<.05 ** p<.01. Robust standard errors are in parentheses. All models include controls for variables included in Tables 1 and 2. Cut-points are suppressed from the output. Sample size for all models are: U.S. men (763), U.S. women (573), Japanese men (2,750), and Japanese women (2,149).

Table A.1: Selection into marriage (probits)

	U.S.		Japan	
Female	-0.118	*	-0.263	**
	(0.054)		(0.069)	
Education	-0.024	*	-0.027	
	(0.011)		(0.017)	
Working	-0.416	**	-0.579	**
	(0.074)		(0.088)	
Children	0.069		0.463	**
	(0.072)		(0.090)	
Health [a,b]				
Fair			0.358	*
			(0.146)	
Average			0.347	**
			(0.134)	
Good	0.015		0.415	**
	(0.090)		(0.141)	
Excellent	-0.022		0.223	
	(0.098)		(0.136)	
Missing	-0.128			
	(0.094)			
Log HH income	0.631	**	0.798	**
	(0.048)		(0.049)	
Type of dwelling	0.674	**	0.517	**
	(0.056)		(0.069)	
N	2,995		7,159	
Log-likelihood	-1,578		-966	

* p<.05 ** p<.01. Robust standard errors are in parentheses. Both models include controls for age, age squared, and survey year dummies. The U.S. model also includes controls for race.

[a] In the U.S., the reference (or omitted) category is the combined category of poor health and fair health. In Japan, the reference category is poor health.

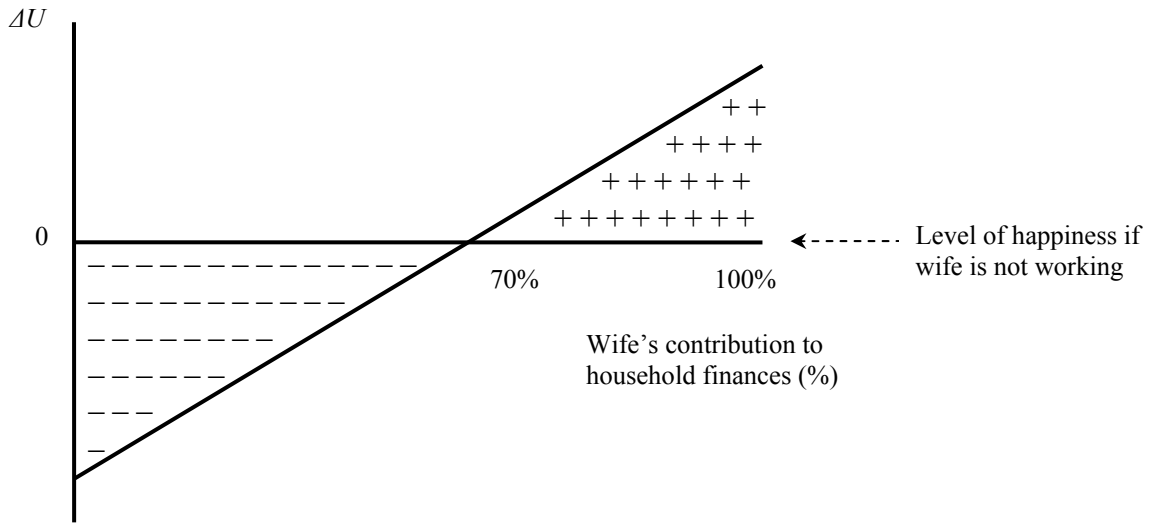

Figure 1: The relationship between wife's contribution to household finances and men's happiness in the U.S.

ENDNOTES

[1] For example, Kahneman and colleagues (2004) are developing a new estimation technique which will be used to calculate a "national well-being account," a measure comparable to economic indicators such as the GDP.

[2] In the literature, several terms are often used interchangeably to represent the same concept: marital satisfaction, marital happiness, and marital quality. According to Campbell, Converse, and Rodgers (1976), a distinction exists in that "happiness" refers to an emotional state while "satisfaction" involves a cognitive judgment against some standard. In this paper, we use the term "marital happiness" because the survey measure specifically asks about "happiness" and we consider marital happiness to be an indicator of marital quality.

[3] See VanLaningham et al (2001) for review of literature regarding the negative effect of children on marital happiness.

[4] Blanchflower and Oswald (2004) examine well-being over time in the U.S. and Britain. However, they examine "general happiness" and not marital happiness. Ono (2003) analyzes the determinants of marriage formation in the U.S., Japan, and Sweden with special attention to variations in the gender institutional context in the three countries. Davis and Greenstein (2004) examine some of the theoretical models tested in the present study in a comparative framework but their outcome measure is the gendered division of household labor.

[5] According to the Statistics Bureau of Japan and the National Center for Health Statistics in the U.S., while the marriage rate was 7.5 (per 1000 population) in 2005 in the U.S., it was only 5.7 in Japan.

[6] See UNDP's Human Development Reports for various years (http://hdr.undp.org) for recent measures of gender equality in U.S. and Japan. The divorce rate in the U.S. has been considerably higher than in Japan, although this gap is closing. In 1990, the divorce rate per 1000 persons was 7.2 in the U.S. versus 1.8 in Japan. In 2000, the corresponding figures were 6.2 in the U.S. versus 3.1 in Japan (U.S. Census Bureau 2005).

[7] Source: Statistical Survey Department, Statistics Bureau, Ministry of Internal Affairs and Communications, Japan.

[8] See Ono and Rebick (2003) for a review of the barriers to women's labor force participation in Japan.

[9] The JGSS are designed and carried out at the Institute of Regional Studies at Osaka University of Commerce in collaboration with the Institute of Social Science at the University of Tokyo under the direction of Ichiro Tanioka, Michio Nitta, Hiroki Sato, and Noriko Iwai, with Project Manager, Minae Osawa. The project is supported financially by a Gakujutsu Frontier Grant from the Japanese Ministry of Education, Culture, Sports, Science and Technology for the 1999-2003 academic years, and the datasets are compiled and distributed by the SSJ Data Archive, Information Center for Social Science Research on Japan, Institute of Social Science, the University of Tokyo.

[10] The GSS is only administered biannually, so the survey years 2001 and 2003 are not available. The JGSS was launched in 2000. The dataset for the year 2003 is the latest version of the JGSS that is publicly available. The response rates for the GSS were .700 in 2000, .701 in 2002, and .704 in 2004. The response rates for the JGSS were .649 in 2000, .631 in 2001, .623 in 2002, and .550 in 2003.

[11] Ordered logit assumes proportional odds between response categories. An alternative approach is to use generalized ordered logistic regression which does not impose this assumption. Regression diagnostics and goodness-of-fit statistics indicated that generalized ordered logistic regression did not produce results that were significantly different from those estimated by ordered logit. We also estimated another model where marital happiness is dichotomized. Responses indicating the highest level of happiness were coded 1, and all other responses were coded 0. The substantive interpretation of these models with dichotomous outcomes did not significantly differ from the models with categorical outcomes.

[12] We examined various specifications of age including age linear, age cubic, and cohort categories. We used age quadratic here because this specification resulted in the best overall fit.

[13] For example, Booth and Johnson (1994) hypothesize that poor health may negatively impact marital happiness through its effect on everyday functioning, shared activities, the gendered division of labor, and the incidence of depression.

[14] It should be noted, however, that the absence of selection effects may be the result of model specification. We cannot fully rule out the possibility of selection effects from our models.

[15] To date, there is only one panel data available in Japan – the Japanese Panel Study of Consumers (JPSC) – but the JPSC sample is limited to women only. See, for example, Nagai (2002), Ono and Raymo (2006) and Yamaguchi (2006) for research on (women's) marital satisfaction using the JPSC data.

[16] For example, the ratio of wife's income to husband's income may be high because the husband's earnings are low, or because the wife's earnings are high (Oppenheimer 1997).

[17] We also conducted separate regressions using own income in quintiles, but the results were not significantly different from those reported in Panel (a) and are not shown here.

[18] A separate t-test of the coefficients showed that the coefficients for the two lowest quintiles were not statistically significant from each other, but the coefficients for quintiles 3 and quintiles 5 are.

[19] Sorensen and McLanahan (1987)'s measure of dependency is $(Y_s - Y) / (Y_s + Y)$ or $(Y_s - Y) / Y_{HH}$ if we assume $Y_{HH} = Y_s + Y$. However, we avoided using this measure since Y_s is missing in the GSS, and we wanted to minimize measurement errors associated with our indirect measure of Y_s.